

GENERATION DATING IN HERODOTOS*

It is generally believed that a substantial number of time intervals and traditional dates given for early Greek history are the result of calculations based on genealogies and on various values for a generation.¹ Although this method is supposed to have been used by Greek chronographers from the fifth century down at least to Kastor of Rhodes in the first, Herodotos must be our main direct evidence.²

But Herodotos is himself suggestive rather than clear cut (as is most of the evidence for generation dating) and interpretation is uncertain. The evidence may be divided into three categories:

1. Time references given in terms of a number of generations.
2. Time intervals which may be based on generation dating.
3. Evidence for various generation values.

What can be made of each category, and what should be included in each category are matters of dispute or uncertainty.³ What time intervals should we think of as based on generation dating? What weight can be given to the evidence for various generation values, and does it help us date events which are given time references in terms of generations?

As a starting-point we should consider the evidence which appears most sound for the value or values of a generation: 2.142.2. This is, apart from a fragment of a much later author, the only direct statement of generation dating in the whole of Greek chronography. For here we are shown a calculation of a time interval made on the basis of a belief that three generations make 100 years. This passage has been seen as evidence of a generation value of $33\frac{1}{3}$ years and for the belief that this generation was peculiarly Herodotean. It has also created a supposition that it was often used by others. I feel it is doubtful whether such conclusions are justified.

First of all, the arithmetic. Herodotos had been told that there were 341 generations of kings and priests who had ruled in Egypt: *καίτοι τριηκόσαιο μὲν ἀνδρῶν γενεαὶ δυνέεται μύρια ἕτεα: γενεαὶ γὰρ τρεῖς ἀνδρῶν ἑκατὸν ἕτεά*

* Professor W. G. Forrest writes: 'When Dr. Rashid Ball was murdered in Nigeria in 1977 he left in near-publishable state among his papers only this essay, written, I think, in 1972. He would have wished to revise it in the light of later studies, especially that of A. B. Lloyd (Herodotus, Bk. ii, *Introduction* (Leyden, 1975), but it seemed to me improper to tamper with the argument and I have made only trifling alterations to his draft.'

¹ For versions of the general theory see W. Den Boer, *Laconian Studies*, 1954, pp. 10 f.; D. W. Prakken, *Studies in Greek Genealogical Chronology*, 1943, ch. 1; F. Mitchel, 'Herodotus' Genealogical Chronology', *Phoenix* 10 (1956), 98 f.

² Schwartz claimed to find a use of the

generation of $33\frac{1}{3}$ years in his reconstruction of Kastor—Göttingen, 1894. The case for generation dating is basically that in some form it must have existed, but whatever the manipulations of later chronographers, more room should probably be allowed for the oral preservation of chronological details than the orthodox picture seems to admit. Otherwise we have to allow that a wider range of values for a generation was used than seems credible.

³ In order to introduce some method into this examination, I have made particular use of J. E. Powell, *A Lexicon to Herodotus*, and the entries under *γενεή* and *ἔτος*. *ἐνιαυτός* is not used for periods of more than one year in Herodotus.

ἐστι. μῆς δὲ καὶ τεσσαράκοντα ἔτι τῶν ἐπιλοιπῶν γενεῶν αἱ ἐπῆσαν τῇσι τριηκοσίῃσι, ἐστὶ τεσσαράκοντα καὶ τριηκόσια καὶ χίλια ἔτεα.

If three generations make 100 years, then it is supposed one generation was thought of as $33\frac{1}{3}$ years. But $341 \times 33\frac{1}{3} = 11,366\frac{2}{3}$ and not 11,340. Herodotos has made a mistake and his total is $26\frac{2}{3}$ years too short.⁴

The calculation divides into two parts. The first is obviously right: if three generations make 100 years, 300 generations make 10,000 years. But although it is quite logical to work out that one generation would be $33\frac{1}{3}$ years we are given no reason to believe that this step was taken,⁵ and the fact that the odd number of generations left over—forty-one—does not give the expected product of $41 \times 33\frac{1}{3} = 1,366\frac{2}{3}$ years should make us hesitate to assume that one generation was ever worked out to be $33\frac{1}{3}$ years. The second part of the calculation could have been made on a different basis. The Egyptians from whom Herodotos got his information knew little of the first 331 kings but provided him with stories of the last ten kings, and gave the exact reign lengths of two, Cheops and Chephren, as fifty and fifty-six years respectively (2. 127. 1, 3). It is conceivable that the 1,340 years given for the forty-one kings include these ten about whom Herodotos' sources were better informed, with exact lengths of the reigns of other kings apart from the two Herodotos gives. Therefore the figure of 1,340 years need not be seen as an attempt to multiply 41 by $33\frac{1}{3}$ years, but as made up partly in this way and partly from a number of irregular reign lengths. There are other possibilities, but even if we cannot be sure how the figure of 1,340 years was arrived at, we are by no means bound to assume a mistake on Herodotos' part.

If Herodotos did make a mistake and had tried to use the generation of $33\frac{1}{3}$ years we should expect to find some support for this generation value elsewhere in his work. However, while there are a number of suggestive figures of hundreds of years which may be based on 'three generations to 100 years', with one possible exception there are no time intervals which end in —33 or —66 years, or close equivalents.⁶

The possible exception is at 1.19.3. After the fall of Sardis, Kroisos is told, on inquiring at Delphi, that the god did all he could to postpone the overthrow of his kingdom, and that Kroisos was given three years' respite from the fate that was awaiting the fifth descendant of Gyges. Since the reigns of the Lydian kings from Gyges to Kroisos total 170 years, the extra three years have been seen as three years' extension over five generations of $33\frac{1}{3}$ years ($5 \times 33\frac{1}{3} = 166\frac{2}{3}$). However the prophecy was that the Heraklids' revenge should come to the fifth descendant of Gyges, and not after five generations (1.13, 2). Also the fall of Sardis does not mark the end of Kroisos' generation since, in Herodotos at least, Kroisos lives on and was barely fifty when he lost the throne. It must be a coincidence that the total for the reigns Herodotos gives for the Lydian kings

⁴ So How and Wells, i. 221; Stein, *Herodot.* i. 164; Rawlinson, i. 221.

⁵ Mitchel, *op. cit.*, p. 63, seems to have been the first to realize this, and gives by far the best and fullest discussion of this passage.

⁶ M. Miller, 'Herodotus as Chronographer', *Klio* 46 (1965), 113, emphasizes the

recognizable pattern obtained in multiples of $33\frac{1}{3}$ which leads her to believe that at 2. 142.2 Herodotos is using the generation for the first time and gets his figures wrong. But rather it can be used as an argument that Herodotos did not calculate with this generation value.

divides by 5 to give an average of just over $33\frac{1}{3}$ years, especially since there is no other example where Herodotos can be shown to have used this generation.⁷

What use did Herodotos make of 'three generations to a century'? There are thirteen time intervals which are multiples of hundreds of years and which could therefore be calculated on this basis, but they are not all equally plausible. Most persuasive are 2.145.4; 2.53.2; and 9.26.4. The first looks very likely, coming as it does so soon after 2.142.2. Herodotos dates Dionysos, Herakles, and the Trojan War at 1,600 (or 1,000), 900, and 800 years before his time, and these periods would then represent 48 (or 30), 27, and 24 generations.⁸ It is possible to see some confirmation that twenty-four generations are the basis of the 800-year period from the Trojan War to Herodotos' own day. At 6.98.2 he claims the Greeks suffered more misfortune during the three generations of Dareios, Xerxes, and Artaxerxes than in the previous twenty generations. What calamity is Herodotos referring to which happened twenty generations before Dareios? It might be the Trojan War; but the Return of the Heraklids happened later and was more disruptive. If we suppose Herodotos was thinking of the Dorian invasion as taking place twenty generations before Dareios, then this is consistent with his dating of the Trojan War at twenty-four generations before his own time. For the Dorian invasion occurred two generations after the Trojan War, and Herodotos belonged to the generation of Artaxerxes.⁹

But if Herodotos' dating of the Trojan War at 800 years before his own time represents twenty-four generations, then it could not be based on the Spartan king lists which offer too few generations for this, as for the date given for Herakles. We seem to have a choice between supposing with E. Meyer that the dates for Herakles and the Trojan War were based on the Spartan king lists, and therefore were worked out on the basis of a forty-year generation which is more or less what is needed, or believing that these dates are worked out on the basis of 'three generations to 100 years' but according to some genealogy which we do not have. I feel that the latter alternative is preferable because of the confirmation which may be found in 6.98.2, and because these dates follow so closely after 2.142.¹⁰

At 2.53.2 Herodotos puts Homer and Hesiod not more than 400 years before his own time, and this could equally well represent twelve generations before Herodotos or twelve generations after the Trojan War.

The other strong candidate is 9.26.4 where the Tegeans tell how their king Echemos defeated Hyllos and how the Heraklids had promised not to attempt a return for 100 years if Hyllos was killed. This is probably to be understood as three generations, though it could have meant just 'a long time', as seems to be

⁷ The extra three years may be the three years following Kyros' overthrow of Astyages and the beginning of his reign, since he was the avenger of the Heraklids, and Herodotos makes it look as if the fall of Sardis comes early in his reign.

⁸ I ignore the problem of Dionysos' date. The emendation of 1,600 to 1,000 does not affect the issue. I also realize that my discussion ignores the possibility that '900' is based on a thirty-year generation and '800'

on a forty-year generation. What I give is what seems to me the simplest solution. There are other periods too which I have discussed under 'three generations to a 100 years' which could be multiples of 30 and 40.

⁹ How and Wells, *ad loc.*, make the same point but according to an arithmetical reckoning.

¹⁰ Twenty generations before Dareios according to the Spartan king lists takes us back to Herakles.

intended in the treaty between the Eleans and the Heraeans (Meiggs and Lewis, *GHI* No. 17).

The remaining instances of intervals in terms of hundreds of years are less convincing. The Scythians (4.7.1) claimed that exactly 1,000 years had elapsed between the time of their first king Targitaos and the invasion of Dareios. The priests of Tyre told Herodotos (2.44.3) that their temple of Herakles was as old as Tyre itself which was founded 2,300 years before. Is Herodotos translating totals of 30 and 69 generations into numbers of years, or was he given time intervals in rounded totals of years? Herodotos' own words clearly indicate the latter. 2.123.2 is readily dismissed since it refers to the period of 3,000 years for the transmigration of the soul, as is 2.73.1 which gives the visit of the Phoenix as occurring every 500 years. We are left with two passages which date Herakles and Dionysos at 17,000 years and 15,000 years before Amasis (2.43.4 and 145.2), these dates being given by the Egyptians, and two puzzling periods of 900 and 700 years in connection with the Egyptian kings Moeris and Anysis (2.13.1 and 140.1).¹¹

What is most striking is that eleven out of the thirteen time intervals which are multiples of 100 years come from Book 2, including the most plausible instances of the use of 'three generations to 100 years'. Herodotos emphasizes the Egyptians' interest in chronology and in calculating dates (2.145.3), and the introduction of 'three generations to 100 years' is in a calculation of the duration of the Egyptian kings which probably came from the Egyptians and was not made by Herodotos. Furthermore the only explicit non-Herodotean evidence of 'three generations to 100 years' which is also the other piece of direct evidence of generation dating is almost certainly from an Egyptian author.

Clement Al. (*Strom.* I. xxi. 136.4) dates the Exodus in the time of Inachos, the Argive king, and 345 years before the Sothic Cycle. From Inachos to the flood of Deukalion and the burning of Phaethon at the time of Krotopas there are forty generations—*εἰς μέντοι τὰ ἑκατὸν ἔτη τρεῖς ἐγκαταλέγονται γενεαί*. We then have a chronology of mythological events down to the first Olympiad. Clement's source for the first section is thought to have been a certain Ptolemy of Mendes and for the chronology (136.5 f.) Thrasylllos, the astrologer who was associated with Tiberius on Rhodes, since he is given the credit for one of the time intervals.¹² The mention of the Sothic Cycle marks the source as Egyptian in any case. Working back from 776/5 we find that the date for the flood of Deukalion and the reign of Krotopas works out at 1533/2 B.C. The Sothic Cycle occurred at intervals of 1,460 years, in 1321 B.C. and 2781 B.C. Therefore the Exodus would be dated at 1666 B.C. or 3126 B.C. Forty generations at three to 100 years make 1,333 years, but this total makes nonsense of the first alternative and gives 1793 B.C. for the second. However if we emend *τεσσαράκοντα* to *τέσσαρες* we have conveniently four generations = 133 years from 1666 to 1533/2 B.C.

Although it may be argued that Clement's source was using a common enough

¹¹ There is an unaccountable contradiction involved with both these periods and the main account of the Egyptian kings. See How and Wells, i. 440. [See now Lloyd, loc. cit.]

¹² This is the only fragment of Thrasylllos — *FGrHist* 253. For Ptolemy of Mendes see *FGrHist* 611. He is just as unknown a figure. Cf. *RE* 23.2, No. 74, 1861–2.

method of generation dating to fill in a gap, it is a curious coincidence that this one other explicit piece of evidence for 'three generations to 100 years' also occurs in an Egyptian context. This should at least make us hesitate to suppose that it was widely used in generation dating in Greek chronography, and be reasonably critical of instances suggestive of its use. It appears to be a novelty taken over by Herodotos from the Egyptians and used only for a few chronological approximations in terms of centuries. It also had the serious disadvantage that it was clumsy to use for numbers of generations which were not divisible by three, and one would expect generation dating to be based on a handier generation value. 'Three generations make 100 years' is an approximation naturally suited to a large calculation involving a large number of generations. It is much more likely to have been an answer to the question, 'How many generations are there in 100 years?' than to 'How long is a generation?'

The evidence which Herodotos provides for the use of other generation values is not very substantial. There is some suggestion of the use of generations of thirty and of forty years, with perhaps a stronger case for the former. The one passage which looks very much like evidence for a generation of thirty years is 7.148.4–149.1. The Argives agreed to join the Greek alliance against Persia if they can make a thirty years' peace with the Spartans and have equal command: *ἵνα δὴ σφί οἱ παῖδες ἀνδρωθέωει ἐν τούτοις τοῖσι ἔτεσι*. This period for a treaty can also be paralleled elsewhere.¹³ In addition there is the oracle given to the Athenians not to attack Aegina for thirty years in 5.89.2, which may represent one generation, and Kypselos is given a reign of thirty years at 5.92. These are the only thirty-year intervals, but there are two possible multiples of thirty years. The tribal names introduced by Kleisthenes continued to be used for sixty years after his death (5.68.2), and this may mean 'for two generations'. The other passage is 4.15.1 where Herodotos says he has calculated the interval between Aristetas' disappearance in Prokonnesos and his reappearance in Metapontum to be 240 years, which could represent eight generations.

There is only one instance of the interval of forty years where this length is given for the reign of Battos at 4.158.1, but we have some multiples of forty which may imply a forty-year generation. At 1.163.2 we are told that Arganthionios ruled over Tartessos for eighty years and lived to be 120, and eighty years is said to be the longest lifespan among the Persians, while the Ichthyophagi live to be 120 (2.23.1). In both these examples eighty and 120 years may represent 2×40 and 3×40 years. The period for which the Assyrians ruled Upper Asia, 520 years, is also divisible by 40, and may represent thirteen generations (1.95.2). Finally the interval of 240 years which occurs at 4.15 could imply six generations of forty years as easily as eight of thirty years. [The date for Homer and Hesiod is, of course, similarly ambiguous.]

Is there any evidence which suggests that some other generation was used? At 1.7.4 the Lydian Heraklidai are said to have ruled for twenty-two generations and 505 years. But since 505 does not divide exactly by 22, and only gives an average of almost twenty-three years, we cannot suppose that this interval is based directly on generation dating. We must have a total of the number of individual reigns which were preserved orally, and perhaps became distorted when a link was made with Herakles.¹⁴

¹³ Cf. the Thirty Years' Peace (Th. 1.23.4) a generation of twenty-three years cf. M. and an alliance between colonists to Naupaktos Miller *Klio* 41 (1963) p. 32. [But cf. W. G. and Opuntians (*IG* ix. 1.334.11 f.) Forrest, *CQ* 19 (1969), 101.]

¹⁴ This is surely preferable to supposing

The remaining time intervals are either irregular reign lengths or short intervals which look as if they have been preserved orally as parts of stories, as, e.g., Solon's ten-year absence from Athens after his reforms were passed, and we have no reason to suppose generation dating is involved.

Can we translate time references given in terms of generations, e.g. the Samians' seizure of the bowl in 3.48.1, according to a particular generation value? There are two insuperable objections. The first is that we should surely suppose that if Herodotos had thought of these generations as having a particular value he would have given it. Secondly how can we tell what generation value was implied? Since we cannot accept an Herodotean generation of $33\frac{1}{3}$ years, we are left with a choice between 30 and 40, and even if it was an allowable procedure to translate these vague time references into years there appears no way of deciding between these two alternatives. We should therefore accept these time references in terms of generations as vague indications and no more. Their importance lies in the fact that they show how generation dating could have developed once a value was attached to a generation.¹⁵

We are left then with about five, perhaps more, uses of 'three generations to 100 years', from possible examples of use of a thirty-year generation, six for forty years, and two examples which may be based on thirty or forty years. Not all these examples are compelling, and they can be matched by an equal number of vague references in terms of generations.¹⁶ The general conclusion that can be drawn is that Herodotos' use of generation dating was not very extensive or consistent. There are few convincing examples of its use, and the majority of short time intervals were probably preserved orally. The cases which look like calculations based on an average generation do not seem to have much in common and just why the vagueness of a reference in terms of generations was abandoned for the precision of dating in years in these examples is difficult to say.

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¹⁵ F. Mitchel, *op. cit.*, gives a useful discussion of passages involving *γενεαι* and argues similarly that no precise values are implied for a generation [cf. Lloyd,

op. cit., esp. p. 180].

¹⁶ Seventeen for generation dating, nineteen for references in terms of generations.